

Revised Academic Hardiness Scale Factor Structure in College Students

The construct of academic hardiness combines hardiness theory (Kobasa, 1979) with academic goal theory (Dweck & Leggett, 1988) to predict students' ability to be successful in academic environments (Benishek, Feldman, Shipon, Mecham & Lopez, 2005). Research has found that academic hardiness is related to SAT scores, academic performance, and college enrollment (e.g., Benishek & Lopez, 2001; Benishek et al., 2005; Creed, Conlon, & Dhaliwa, 2013).

Although academic hardiness scales have been developed and validated on elementary (e.g., Kamtsios & Karagiannopoulou, 2013) and high school students (e.g., Benishek et al., 2005), no study to date has examined the factor structure in college students. Therefore, the current study examined the factor structure of the Revised Academic Hardiness Scale (RAHS; Benishek et al., 2005) in two samples of college students.

Study 1

Four hundred fifty-four undergraduate students (65% female, 86% European American, age $M = 21.52$, $SD = 4.98$) at a large Midwestern university participated in the exploratory factor analysis. They completed the 40-item RAHS and a demographics questionnaire.

Parallel analysis indicated the presence of five separate factors; principal component analysis with Varimax rotation showed these accounted for 52.92% of the variance. Results suggested three cross-loading items, with the vast majority of remaining items loading on the previously identified factors using high school students (Benishek et al., 2005) of Commitment, Control of Effort, Control of Affect, and Challenge, with the Challenge items being split into two subscales (i.e., favoring easy classes and favoring difficult classes).

Study 2

One hundred sixty undergraduate students (48% female, 65% European American, age $M = 19.68$, $SD = 2.82$) at a small Midwestern college participated in the confirmatory factor analysis. As in Study 1, they completed the RAHS and a demographics questionnaire.

The first model tested was the five-factor solution identified in Study 1, with the three cross-loading items removed and the factors allowed to covary. Model fit was adequate, with the Bollen-Stine bootstrap significant at $p < .05$, $\chi^2/df = 1.61$, SRMR = .083, and RSMEA = .062, 90% CI = .055 - .069. Modification indices suggested covarying two pairs of error terms; an examination of the scale indicated this was due to item redundancy, so the modifications were made. Model fit was improved, with a nonsignificant Bollen-Stine bootstrap, $\chi^2/df = 1.55$, SRMR = .081, and RSMEA = .059, 90% CI = .051 - .066.

Two alternate models were tested: a hierarchical five-factor solution (with the five factors loading on a single higher-order factor) and a one-factor solution (with all items loading on a single factor). Comparisons indicated these did not fit as well as the five-factor solution (Weston & Gore, 2006), indicating the RAHS is better measured by factors than an overall scale.

Discussion

A five-factor solution for the RAHS was identified and confirmed in samples of college students. These findings generally aligned with those in the literature for high school students (Benishek et al., 2005), with the exception of the Challenge items split into two factors.